CLAIMS

1. A method of allocating switch requests within a packet switch, the method comprising the steps of

(a) generating switch request data for each input port indicative of the output ports to which data packets are to be transmitted ;

(b) processing the switch request data for each input port to generate request data for each input port-output port pairing;

(c) generating an allocation plan for the switch for a frame of a defined number of packets, by a first stage in which allocation rules are applied such that the number of requests from each input port and to each output port is no greater than the defined frame length, and one or more further stages in which allocation rules are applied to allocate requests remaining unallocated by the previous stage.

2. A method according to claim 1, wherein unallocated switch requests are reserved for use in a subsequent stage of switch request allocation.

3. A method according to claim 1 or claim 2, wherein at least one of the stages is a process comprises the steps of

(a) generating switch request data for each input port indicative of the output ports to which data packets are to be transmitted;

(b) processing the switch request data for each input port to generate request data for each input port-output port pairing;

(c) generating an allocation plan by reducing the number of queue requests relating to each of one or both sets of ports by a value such that the number of requests relating to each member of the set or sets of ports is no greater than a predetermined frame value.

4. A method according to claim 3, wherein the transformation of the request data is done by using the summations of the requests from each input port.

5. A method according to claim 3 or claim 4, wherein the transformation of the request data is done by using the summations of the requests to each output port.

6. A method according to claim 3, 4, or 5 wherein the reduction of the request data from each input port and to each output port is done, in such cases where the number or requests is greater than the maximum capacity of the corresponding input port or corresponding output port, the reduction being by a factor selected such that the number of requests from the corresponding input port and to the corresponding output port is no greater than the maximum capacity of the corresponding input port and the corresponding output port.

7. A method according to claim 3, claim 4, or claim 5, wherein the reduction of the request data from each input port and to each output port is done using a common factor selected such that the number of requests from each input port and to each output port is no greater than the maximum request capacity of each input port and each output port.

8. A method according to any of claims 3 to 6, wherein the reduction of the request data comprises

(a) reducing the number of requests to each output port; and

(b) reducing the number of requests in the resulting reduced request data that exceeds the capacity of each input port.

9. A method according to any of claims 3 to 6, wherein the transformation of the request data comprises

(a) reducing the number of requests from each input port; and

(b) reducing the number of requests in the resulting reduced request data that exceeds the capacity of each output port.

10. A method according to any of claims 3 to 9, wherein the process is iterative, and is repeated one or more times in respect of input ports and output ports for which capacity remains available after the previous iteration is complete.

11. A method of packet switching wherein the input port-output port routing is allocated according to the method of any preceding claim and the packets are switched on the basis of the allocated routing.

12. A packet switch in which the input port-output port routing is allocated in accordance with the method of any of claims 1 to 11.

13. A packet switch according to claim 12, wherein packets are switched from an input port to a specified output port in accordance with the allocated routing.